

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1 – 103 (cancelled)

Claim 104 (previously presented): A method of purifying gram quantities of plasmid DNA from a cell, the method comprising the steps of:

lysing bacterial cells containing plasmid DNA with a lysis solution to form a lysate solution;

removing contaminants from the lysate solution by precipitating the contaminants from a supernatant of the lysate solution;

recovering plasmid DNA from the supernatant using column chromatography over a tentacle anion exchange resin.

Claim 105 - 108 (cancelled)

Claim 109 (previously presented): The method in claim 104 wherein the tentacle anion exchange resin is a TMAE tentacle resin.

Claim 110 (previously presented): The method in claim 109 wherein the use of the TMAE tentacle anion exchange resin comprises the step of eluting the plasmid DNA via a step gradient.

Claim 111 (previously presented): The method in claim 104 wherein the tentacle anion exchange resin has a particle size of 20-40 microns.

Claim 112 (previously presented): The method in claim 109 wherein the TMAE tentacle anion exchange resin comprises a methacrylate based copolymer having a tentacle linked TMAE functional group.

Claim 113 (previously presented): The method in claim 109 wherein the plasmid DNA is eluted from the TMAE tentacle anion exchange resin with a salt solution comprising about 1.9 M ammonium sulfate and at least 0.7M NaCl.

Claim 114 (previously presented): The method in claim 104 wherein the step of recovering plasmid DNA from the supernatant comprises the steps of:

- passing the supernatant through a tentacle anion exchange resin ; wherein the plasmid DNA binds to the resin;

- eluting the plasmid DNA in a first eluate from the resin;

- adjusting a salt concentration of the first eluate to contain at least 2M ammonium sulfate;

- passing the first eluate through a hydrophobic interaction resin; wherein supercoiled plasmid DNA binds to the hydrophobic interaction resin; and eluting the supercoiled plasmid in a second eluate from the hydrophobic interaction resin via an eluent having less than 2M ammonium sulfate.

Claim 115 (New): A method for removing contaminants from a plasmid DNA solution comprising:

- a) contacting a solution comprising plasmid DNA with a tentacle anion exchange resin, the solution having a conductivity at which the plasmid DNA is bound to the resin;

- b) washing the resin to elute the contaminates; and

- c) eluting the plasmid DNA with a step or continuous gradient of increasing conductivity.

Claim 116 (New): The method of claim 115, wherein the tentacle anion exchange chromatography resin comprises tentacles having about 15 to about 50 units in length.

Claim 117 (New): The method of claim 115, wherein the tentacle anion exchange chromatography resin comprises tentacles having an average of about 18 charged groups covalently bound to each tentacle.

Claim 118 (New): The method of claim 115, wherein the tentacle anion exchange resin is a strong anionic changer resin.

Claim 119 (New): The method of claim 115, wherein the tentacle anion exchange resin has TMAE functional groups.

Claim 120 (New): The method of claim 115, wherein the plasmid DNA solution is a clarified lysate obtained after alkaline lysis of bacterial cells comprising the plasmid DNA and removal of precipitated proteins, chromosomal DNA and cell debris.

Claim 121 (New): The method of claim 115, further comprising a step of hydrophobic interaction chromatography (HIC).